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10/568,616

02/16/2006

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EXAMINER

OJURONGBE, OLATUNDE S

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/568,616	<b>Applicant(s)</b> OKAMOTO ET AL.	
	<b>Examiner</b> OLATUNDE S. OJURONGBE	<b>Art Unit</b> 4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060216</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brode et al (US 3,632,557).

Regarding **claim 1**, Brode et al discloses a curable composition (col.1, line 50) comprising:

an organic polymer, (col. 1, line 50) which has groups represented by the general formula 1, wherein R<sup>1</sup> is a hydrogen atom (see NH-C(=O)- in structure col.5, lines 60-64) and one or more silicon-containing functional groups (see -Si-(-OR)<sub>3</sub> in structure, col.5, lines 57-64) capable of cross-linking by forming siloxane bonds (col. 6, lines 9-14) this serves as component A of the instant claim; and a metal carboxylate, (see metal salts of carboxylic acids used as catalyst col.6, line 27), this serves as component B of the instant claim.

However, Brode et al does not explicitly disclose the organic polymer having on average 1.1 to 50 groups per one organic polymer (A) molecule thereof of -NH-C(=O)-.

Brode et al further discloses that the value of m in the disclosed structure of col.5, lines 57-64, is at least 1 (col. 6, lines 1-2), which makes the number of -NH-C(=O)- groups at least 4.

It is known in the art that the higher the molecular weight of a polymer, the higher the viscosity of the polymer; since the instant specification is silent to unexpected results, the average number of -NH-C(=O)- is not considered to confer patentability to the claims, as the viscosity of the organic polymer is a variable that can be modified, among others, by adjusting the number of m, thus the number of -NH-C(=O)- groups, in the organic polymer, with said viscosity increasing as the number of m, thus the number

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of  $\text{-NH-C(=O)-}$  groups in the organic polymer increases. The precise number of  $m$ , thus the number of  $\text{-NH-C(=O)-}$  groups, in the organic polymer of Brode et al would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed average number of  $\text{-NH-C(=O)-}$  groups in the organic polymer cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the number of  $m$ , thus the number of  $\text{-NH-C(=O)-}$  groups, in the organic polymer composition of Brode et al to obtain the desired viscosity. (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

5. **Claims 2-3, 5-7,10-11,13-14 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brode et al (US 3,632,557) as applied to claim 1 above, in view of Kiyoko et al (JP 05-039428).

Regarding **claims 2-3**, Brode et al discloses all the claim limitations as set forth above. Though Brode et al further discloses that any silanol condensation catalyst may be employed in the invention for example, metal salts of carboxylic acids (metal carboxylates) or other conventional acidic catalysts (col.6, lines 22-30), Brode et al does not explicitly disclose the composition in which the carbon atom adjacent to the carbonyl

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group of the metal carboxylate and/or of the carboxylic acid is a tertiary or quaternary carbon atom.

Kiyoko et al discloses a similar curable composition comprising an organic polymer (see polyoxyalkylene 0018, line 2) which has a hydrolytic silicon group (0018, line 1), and a curing catalyst, (see bismuth compounds, 0005, lines 3-4), the curing catalyst serves as component (B).

Kiyoko et al further discloses that bismuth compounds, specifically bismuth tris(neodecanoate) and bismuth tris(2-ethylhexoate) (0008, lines 3-4) are dramatically effective and safe to use as room temperature curing catalyst for a polymer which comprises a hydrolytic silicon group (0007, lines 1-4).

Bismuth tris (2-ethylhexaoate) and bismuth tris(neodecanoate) are metal carboxylates in which the carbon atom adjacent to the carbonyl group of the metal carboxylate is a tertiary and quaternary carbon atom respectively.

Since the compositions of modified Brode et al is similar to that of Kiyoko et al and both inventions are in the same field of endeavor : sealants (Brode et al, col.6, lines 68-70 and Kiyoko et al, 0002, lines 1-3), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated either bismuth tris(2-ethylhexaoate) or bismuth tris(neodecanoate) in the composition of modified Brode et al; Such combination would amount to nothing more than the use of a known element for its intended use in a known environment to accomplish entirely expected result.

Regarding claims **5,10 and 11**, modified Brode et al discloses all the claim limitations as set forth above and further discloses the curable composition comprising component (B) in an amount of 0.0025 to 0.05 parts by weight in relation to 100 parts by weight of the component (A) (see 25 to about 500 parts per million, Brode et al, col.6, lines 33-34).

Though modified Brode et al does not explicitly disclose the catalyst (component B) in an amount of 0.01 to 20 parts by weight in relation to 100 parts by weight of the polymer (component A), modified Brode et al further discloses that lower or higher amounts of catalysts than the range disclosed may be employed in the invention (Brode et al, col.6, lines 34-36).

Since the instant specification is silent to unexpected results, the amount of catalyst (component B) is not considered to confer patentability to the claims; as the rate of curing is a variable that can be modified, among others, by adjusting said amount of catalyst (component B), with said rate of curing increasing as the amount of catalyst (component B) increases, the precise amount of catalyst (component B) would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made; as such, without showing unexpected results, the claimed amount of catalyst (component B) cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of the catalyst (component B) in the composition of modified Brode et al in order to obtain the desired curing rate (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general

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conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Regarding **claims 6, 13, 14 and 16**, modified Brode et al discloses all the claim limitations as set forth above. Though modified Brode et al discloses that amine salts can be used as catalyst in the curable composition (col.6, line 28), modified Brode et al does not disclose the curable composition further comprising an amine compound as component (C).

Kiyoko et al discloses a similar curable composition comprising an organic polymer (see polyoxyalkylene 0018, line 2) which has a hydrolytic silicon group (0018, line 1), and a curing catalyst, (see bismuth compounds, 0005, lines 3-4), the curing catalyst serves as component (B) and further discloses that the concomitant use of the bismuth compound with an alkali, preferably an amine, has a facilitatory effect on the curing process of the curable composition (Kiyokoe et al, 0010, lines 2-3 and 0012, line 1), since the composition of modified Brode et al is similar to that of Kiyoko et al and both inventions are in the same field of endeavor : sealants (Brode et al, col.6, lines 68-70 and Kiyoko et al, 0002, lines 1-3), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the bismuth compound with an amine in order to increase the rate of curing. Such combination would amount to nothing more than the use of a known element for its intended use in a known environment to accomplish entirely expected result.; the amine serves as a component (C).



Regarding **claims 7**, modified Brode et al discloses all the claim limitations as set forth above and further discloses and further discloses the curable composition comprising the component (C) in an amount of preferably 0.01 to 3 parts by weight in relation to 100 parts by weight of the component (A).

However, modified Brode et al does not explicitly disclose the curable composition comprising the component (C) in an amount of 0.01 to 20 parts by weight in relation to 100 parts by weight of the component (A).

Since the instant specification is silent to unexpected results, the amount of catalyst (component C) is not considered to confer patentability to the claims; as the rate of curing is a variable that can be modified, among others, by adjusting said amount of catalyst (component C), with said rate of curing increasing as the amount of catalyst (component C) increases, the precise amount of catalyst (component C) would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made; as such, without showing unexpected results, the claimed amount of catalyst (component C) cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of the catalyst (component C) in the composition of modified Brode et al in order to obtain the desired curing rate (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

6. **Claims 4, 12 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brode et al (US 3,632,557) as applied to claim 1 above, in view of Kotani et al (US 6,350,345).

Regarding **claims 4 and 15**, modified Brode et al discloses all the claim limitations as set forth above. Though Brode et al further discloses that any silanol condensation catalyst may be employed in the invention for example, metal salts of carboxylic acids (metal carboxylates) or other conventional acidic catalysts (Brode et al, col.6, lines 25-26), Brode et al does not explicitly disclose the curable composition in which the component (B) is a carboxylic acid, the carboxylic acid component (B) is in an amount of 0.01 to 20 parts by weight in relation to 100 parts by weight of the component (A) or the curable composition with the carboxylic acid component (B) further comprising an amine compound (C).

Kotani et al discloses a similar curable composition (col.1, lines 4-5) which comprises a polymer that comprises of -Si(OR) groups (see -Si(CH<sub>3</sub>)(OCH<sub>3</sub>)<sub>2</sub>) and silanol condensation catalyst (col.14, line 15). Kotani et al further discloses carboxylic acid (Kotani et al, col.14, lines 22-23) and a combination of an organic carboxylic acid and an organic amine (Kotani et al, col.61-62) as equivalents of dibutyltin dilaurate and stannous octoate (catalysts disclosed by Brode et al, col.6, lines 27-28), (see Kotani et al, col.14, lines 26 and 28).

As the reference (Brode et al, col.6, lines 25-26) is not limited to any specific examples of curing catalyst and as curable compositions comprising carboxylic acid or a combination of an organic carboxylic acid and an organic amine as curing catalysts

are well known in the art at the time the invention was made, as evidenced by Kotani et al, as set forth above, and further, as the instant specification is silent to unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use any curing catalyst, including carboxylic acid as component (B) or a combination of an organic carboxylic acid and an organic amine as components B and C respectively in the curable composition of modified Brode et al; since substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art, said combination would amount to use of a known element for its intended use in a known environment to accomplish entirely expected result.

Regarding **claim 12**, modified Brode et al discloses all the claim limitations as set forth above and further discloses the curable composition comprising the component (B) in an amount of 0.1 to 20 parts by weight in relation to 100 parts by weight of the component (A), (see accelerator, Kotani et al, col.15, lines 3-5).

However, modified Brode et al does not explicitly disclose the curable composition, comprising the component (B) in an amount of 0.01 to 20 parts by weight in relation to 100 parts by weight of the component (A).

Since the instant specification is silent to unexpected results, the amount of catalyst (component B) is not considered to confer patentability to the claims; as the rate of curing is a variable that can be modified, among others, by adjusting said amount of catalyst (component B), with said rate of curing increasing as the amount of catalyst

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(component B) increases, the precise amount of catalyst (component B) would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made; as such, without showing unexpected results, the claimed amount of catalyst (component B) cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of the catalyst (component B) in the composition of modified Brode et al in order to obtain the desired curing rate (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

7. **Claims 8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brode et al (US 3,632,557) in view of Kiyoko et al (JP 05-039428) as applied to claims 2 and 3 above, in further view of Kotani et al (US 6,350,345) and in further view of Okamoto et al ( WO 03/011978, see English version US 7,115,695).

Regarding **claims 8 and 9**, modified Brode et al discloses all the claim limitations as set forth above and further discloses a curable composition in which catalyst (B) may be any silanol condensation catalyst including metal salts of carboxylic acids (metal carboxylates) or other conventional acidic catalysts (Brode et al, col.6, lines 22-30), however, modified Brode et al does not explicitly disclose the composition in which the component (B) is a carboxylic acid.

Kotani et al discloses a similar curable composition (col.1, lines 4-5) which comprises a polymer that comprises of -Si(OR) groups (see -Si(CH<sub>3</sub>)(OCH<sub>3</sub>)<sub>2</sub>) and silanol condensation catalyst (col.14, line 15). Kotani et al further discloses carboxylic acid (Kotani et al, col.14, lines 22-23) as an equivalent of bismuth tris(2-ethylhexanoates) and bismuth tris (neodecanoate) (catalysts disclosed by modified Brode et al, see Kiyoko et al, 0008, lines 3-4), (see Kotani et al, col.14, lines 60-61).

As the reference is not limited to any specific examples of curing catalyst and as curable compositions comprising carboxylic acids as curing catalysts are well known in the art at the time the invention was made, as evidenced by Kotani et al, as set forth above, and further, as the instant specification is silent to unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use any curing catalyst, including carboxylic acid as component (B) in the curable composition of modified Brode et al; since substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art, said combination would amount to use of a known element for its intended use in a known environment to accomplish entirely expected result.

However, modified Brode et al does not disclose a composition in which the carbon atom adjacent to the carbonyl group of the carboxylic acid is a tertiary or quaternary carbon atom.

Okamoto et al discloses a similar curable composition (col.2, lines 50-51) comprising: (A) an organic polymer containing at least one silicon-containing group which has a hydroxyl or hydrolysable group bonded to the silicon atom and which is

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crosslinkable by forming siloxane bonds (col.2, lines 51-55) and (B) one or more carboxylic acid metal salts which serve as condensation catalysts (col.2, lines 55-56).

Okamoto et al further discloses that in view of availability, cheap price, good compatibility with the organic polymer containing the silicon group which has a hydroxyl or hydrolysable group bonded to the silicon atom and curing rate, a carboxylic acid wherein a carbon atom adjacent to a carbonyl group is tertiary carbon or quaternary carbon is more preferred as a constituent of (B). (col.15, line 61-col.16, line 8).

Since both inventions of modified Brode et al and Okamoto et al disclose similar compositions and the two inventions are in the same field of endeavor: sealants (Brode et al, col.6, lines 68-70 and Okamoto et al, col.2, lines 30-37), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a carboxylic acid wherein the carbon atom adjacent to the carbonyl group is a tertiary carbon or a quaternary carbon as disclosed by Okamoto et al in the invention of Brode et al due to its availability, cheap price, compatibility with the organic polymer with the silicon group and in order to increase the curing rate; such combination would amount to nothing more than the use of a known element in a known environment to accomplish entirely expected result.

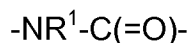
8. **Claims 1-3, 5-7, 10-11,13-14 and 16**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. (WO 03/011978 see English translation, US 7,115,695).

Regarding **claim 1**, Okamoto et al discloses a curable composition (col.2, lines 50-51) comprising:

(A) an organic polymer containing at least one silicon-containing group which has a hydroxyl or hydrolysable group bonded to the silicon atom and which is crosslinkable by forming siloxane bonds (col.2, lines 51-55)

(B) one or more carboxylic acid metal salts (metal carboxylates). (col.2, lines 55-56)

Okamoto et al further discloses that a more preferable embodiment of the invention is directed to a curable composition wherein the organic polymer as the component (A) is a polyoxyalkylene polymer (col.3, lines 26-29) and that the main chain skeleton of the polyoxyalkylene polymer may contain other components such as urethane bond component (col.8, lines 43-47); an urethane bond component may be represented as



wherein  $\text{R}^1$  is a hydrogen atom.

However, Okamoto et al does not disclose the polyoxyalkylene polymer (organic polymer A) having on average 1.1 to 50 groups per one molecule thereof of urethane bond components.

It is known in the art that the higher the molecular weight of a polymer, the higher the viscosity of the polymer; since the instant specification is silent to unexpected results, the average number of  $-\text{NH}-\text{C}(=\text{O})-$  is not considered to confer patentability to the claims, as the viscosity of the organic polymer is a variable that can be modified, among others, by adjusting the number of  $m$ , thus the number of  $-\text{NH}-\text{C}(=\text{O})-$  groups, in

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the organic polymer, with said viscosity increasing as the number of m, thus the number of  $\text{-NH-C(=O)-}$  groups in the organic polymer increases. The precise number of m, thus the number of  $\text{-NH-C(=O)-}$  groups, in the organic polymer of Brode et al would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed average number of  $\text{-NH-C(=O)-}$  groups in the organic polymer cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the number of m, thus the number of  $\text{-NH-C(=O)-}$  groups, in the organic polymer composition of Brode et al to obtain the desired viscosity. (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Regarding **claim 2 and 3**, Okamoto et al discloses all the claim limitations as set forth above and further discloses the curable composition, in which in view of catalytic activity, the metal carboxylates selected from the group including iron 2-ethylhexanoate, titanium 2-ethylhexanoate, iron neodecanoate, titanium neodecanoate, iron naphthenate, titanium naphthenate are more preferable. The carbon atom adjacent to the carbonyl group of the metal hexanoate or naphthenate is a tertiary carbon atom and the carbon atom adjacent to the carbonyl group of the metal neodecanoate is a quaternary carbon atom.



Regarding **claims 5,10 and 11**, Okamoto et al discloses all the claim limitations as set forth above and further discloses the curable composition , comprising the component (B) in a preferably amount of 0.005 to 5 parts by weight in relation to 100 parts by weight of the component (A) (col.17, lines 9-13) and further discloses that the metal carboxylates act as curing catalyst in the curing processs (col.2, lines 40-49).

However, Okamoto et al does not disclose the curable composition, comprising the component (B) in an amount of 0.01 to 20 parts by weight in relation to 100 parts by weight of the component (A).

Since the instant specification is silent to unexpected results, the amount of catalyst (component B) is not considered to confer patentability to the claims; as the rate of curing is a variable that can be modified, among others, by adjusting said amount of catalyst (component B), with said rate of curing increasing as the amount of catalyst (component B) increases, the precise amount of catalyst (component B) would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made; as such, without showing unexpected results, the claimed amount of catalyst (component B) cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of the catalyst (component B) in the composition of modified Brode et al in order to obtain the desired curing rate (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general

conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Regarding **claim 6,13, 14 and 16** Okamoto et al discloses all the claim limitations as set forth above and further discloses the curable composition, further comprising an amine compound as a component (C). (col.17, lines 31-34).

Regarding **claim 7**, Okamoto et al discloses all the claim limitations as set forth above and further discloses the curable composition, comprising the component (C) in a preferably amount of 0.01 to 20 parts by weight in relation to 100 parts by weight of the component (A). (col.18, lines 39-43).

9. Claims **4, 8, 9, 12 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al (US 7,115,695) as applied to claims 1-3 above, in view of Kotani et al (US 6,350,345).

Regarding **claim 4**, Okamoto et al discloses all the claim limitations as set forth above. Okamoto et al further discloses carboxylic acid metal salts as component (B) (col.3, line 43), however, Okamoto et al does not disclose the curable composition, in which the component (B) is a carboxylic acid.

Kotani et al discloses a curable composition (col.1, lines 4-5) which comprises a polymer that comprises of -Si(OR) groups (see -Si(CH<sub>3</sub>)(OCH<sub>3</sub>)<sub>2</sub>) and silanol

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condensation catalyst (col.14, line 15). Kotani et al further discloses carboxylic acid and salts of carboxylic acids as equivalent catalysts, (col.14, lines 20-23).

As curable compositions comprising carboxylic acid curing catalyst were well known in the art at the time the invention was made, as evidenced by Kotani et al, and further, as the instant specification is silent to unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use any curing catalyst, including carboxylic acid as component (B) in the curable composition of modified Okamoto et al; said combination would amount to use of a known element for its intended use in a known environment to accomplish entirely expected result.

Regarding **claims 8 and 9**, modified Okamoto et al discloses all the claim limitations as set forth above; though modified Okamoto et al et al does not disclose a composition in which the carbon atom adjacent to the carbonyl group of the carboxylic acid is a tertiary or quaternary carbon atom, it however discloses that in view of availability, cheap price, good compatibility with the organic polymer containing the silicon group which has a hydroxyl or hydrolysable group bonded to the silicon atom and curing rate, a carboxylic acid wherein a carbon atom adjacent to a carbonyl group is tertiary carbon or quaternary carbon is more preferred as a constituent of (B). (col.15, line 61-col.16, line 8). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a carboxylic acid in which the carbon atom adjacent to the carbonyl group of the carboxylic acid is a tertiary or quaternary carbon atom.

Regarding **claim 12**, modified Okamoto et al discloses all the claim limitations as set forth above and further discloses the curable composition comprising the component (B) in an amount of 0.005 to 5 parts by weight in relation to 100 parts by weight of the component (A), (see Okamoto, col.4, lines 18-23).

However, modified Okamoto et al does not explicitly disclose the curable composition, comprising the component (B) in an amount of 0.01 to 20 parts by weight in relation to 100 parts by weight of the component (A).

Since the instant specification is silent to unexpected results, the amount of catalyst (component B) is not considered to confer patentability to the claims; as the rate of curing is a variable that can be modified, among others, by adjusting said amount of catalyst (component B), with said rate of curing increasing as the amount of catalyst (component B) increases, the precise amount of catalyst (component B) would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made; as such, without showing unexpected results, the claimed amount of catalyst (component B) cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of the catalyst (component B) in the composition of modified Okamoto et al in order to obtain the desired curing rate (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Regarding **claim 15**, modified Okamoto et al discloses all the claim limitations as set forth above and further discloses the curable composition further comprising an amine (Okamoto et al, col.2, lines 61-63).

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLATUNDE S. OJURONGBE whose telephone number is (571)270-3876. The examiner can normally be reached on Monday-Thursday, 7.15am-4.45pm, EST time, Alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272 1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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